"saccharine;" the sugar-character of the rock being more readily recognizable by the sight than the taste, we think the accepted term "saccharoid" better in every respect. Lastly, we believe that, by referring to some of the "Explanations of Maps and Sections," of the Geological Survey, relating to Wilts and Oxfordshire, Mr. Jukes will find that his proposed term "Inlier" (p. 201) has already been invented by some of his colleagues as a good and useful word for valleys-of-elevation and such like.

Few of the foregoing remarks at all affect the intrinsic value of the 'Student's Manual of Geology.' It is a good work, already enhanced by careful emendations and by the detersive process of being re-edited by an author who has truth alone in view whilst striving to serve the rising generation in mastering the intricate history of the globe,—a task becoming more and more necessary for the young, from the exigencies of the period, and more and more useful to man in every part of the globe.

An Appendix "On Geological Surveying," of considerable value, and a full Index, which is also glossarial, complete the work. We think that a careful pruning of the theoretical portions, and condensation of some descriptive parts, will be required to balance the additional information that the author must have accumulated, however soon a new edition of this really serviceable Manual is called for.

The Coal-fields of Great Britain: their History, Structure, and Resources. With Notices of the Coal-fields of other parts of the World. By Edward Hull, B.A. With Map and Illustrations. Second Edition, 1861.

The history of coal-mining affords an interesting chapter at the commencement of this little volume. Possibly used by the aborigines, coal seems to have been worked in Britain by the Romans, and was certainly in household use among the Saxons, and has continued to be an article of commerce, with a gradually increasing consumption, until the quantity now annually raised from the British area alone is nearly 80,000,000 tons. The difficulties in arriving at exact information as to the quantity of coal raised in Great Britain and Ireland are being mastered by the energy of the Mining Record Office; and an approach to an exact knowledge of the extent and thickness of the available coal-seams is being gradually made by the Geological Survey,—the labours of previous as well as contemporary geologists, and the willing co-operation of coal-owners and practical coal-workers, aiding these researches to a very great extent. To put together in a tangible form the results of the elaborate coal-statistics already made, and to define with anything like accuracy the coal-areas, so that the scientific geologist might have a useful work of reference, and the public be supplied with a compendious and readable treatise, was a laudable and somewhat difficult undertaking. Mr. E. Hull, one of the Geological Surveyors, and hence personally acquainted with the real character and condition of some of the English coal-fields, boldly took in hand the large and important

subject of coal-resources, and has treated it very satisfactorily, bringing to the task good geological knowledge and conscientious exactitude.

The second edition of this work has quickly followed on the first, with additional information, partly derived from the experience of others (chiefly colleagues in the Geological Survey), and partly elaborated by the author.

The probable duration of our coal-supply is, of course, a most interesting point of inquiry, and has been the subject of innumerable treatises and newspaper articles. Mr. Hull, on careful consideration of known facts, states that possibly, if the increase of coal-consumption continue to enlarge in future years in the same ratio that it has of late progressed, our coal will barely last for 325 years; but he adds that various causes may interfere with this rapidly progressing ratio, some, however, accelerating rather than diminishing it.

To the naturalist a wide field of research is opened by the working of the coal-measures and the associated strata. The fossils, as the palæontologist knows, are numerous and highly interesting. Besides the plants, some are terrestrial, and many are referable to genera that now inhabit the sea; others have apparently such close relationship to some existing fluviatile and estuarine animals that many strata in the old Carboniferous Formation have been regarded as having been formed in brackish, if not fresh, water. The wholly marine condition, however, of the coal-beds is at present recognized by several authoritative geologists; and nowhere perhaps is this view better supported than in H. D. Rogers's great work on the Geology of Pennsylvania. Mr. Binney, too, and Mr. Salter have their own facts and arguments in support of the theory that coal-jungles grew in shallow *seas*. The combination, however, of sea, estuary, lagoon, and river in the formation of coal, on an oscillating sea-board, is succinctly stated in Mr. Hull's chapters (II. & III.) on the Formation of Coal; but the possibly freshwater or brackish character of some of the Mollusks found in certain beds (*Anthracomya*, *Anthracosia*, &c.) is perhaps allowed to lapse too readily. The presence of *Estheria* (whose existing species have freshwater habitats) in the Coal-formation, as lately announced in the 'Neues Jahrbuch,' 1861, may also be found to influence opinions on this subject.

The fossil flora of the Coal is still imperfectly known. Geinitz, of Dresden, has produced a work on the Carboniferous plants of Saxony, which may well serve as a model for British palæobotanists. Exact observation on the relative distribution of the fossil plants and other organisms, hitherto collected far too indiscriminately to serve the purpose of exact geology, has already been insisted upon by Mr. Salter and others. Many a good specimen of reptile, fish, crustacean, mollusk, &c., has been stored, described, and figured, without its position in the coal-measures having been noted with sufficient exactness; and it has therefore proved of about as much use to the geologist as a medal of unknown origin could be to a numismatist.

The physical structure of the Coal-fields is a life-study for any geologist. The Geological Surveyors of Great Britain and Ireland

are steadily adding to the stock of knowledge on this subject, and their maps, sections, and explanations are diffusing correct information. They can work but slowly, however; and much can be done by others: and of this the valuable and lucid memoir by Mr. Marcus Scott, recently published in the Geological Society's Journal, on the unconformability of the Upper and the Lower Coal-measures of Coalbrook Dale, is a striking example.

The study of coal and the coal-measures has been greatly advanced by Mr. Hull's treatise; for the subject is therein carefully and clearly presented in its many different aspects, with much light derived from his own and others' experience; and his map and sections bring to the eye much valuable practical and theoretical information, in which the results of Mr. Hull's own labours have a conspicuous and most worthy standing*. Doubtless further editions of the work before us will be called for. The increasing interest shown by the public in geology, and the direct interest we all feel in the coal-supply, will induce the author to still further improve his work with amendments of condensed information. Even now, few books are more worthy to bear the motto "scientia et utilitas."

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

May 27, 1862.—Prof. Huxley, F.R.S., V.P., in the Chair.

On a New Species of Chlamydera, or Bower-Bird. By John Gould, Esq., F.R.S., etc.

I am indebted to the researches of F. T. Gregory, Esq., the West Australian explorer, for a knowledge of a new species of this group of birds, which are rendered remarkable by their habit of constructing bowers or playing-places. It was collected by Mr. Gregory in North-western Australia, and is doubtless the species which constructs the bowers described by Captain (now Sir George) Grey in the first volume of his 'Travels,' pp. 196 and 245, where he states that, on gaining the summit of one of the sandstone ranges forming the watershed of the streams flowing into the Glenelg and Prince Regent's Rivers, "we fell in with a very remarkable nest, or what appeared to me to be such. We had previously seen several of them, and they had always afforded us food for conjecture as to the agent and purpose of such singular structures." This "very curious sort of nest, which was frequently found by myself and other individuals of the party, not only along the sea-shore, but in some instances at a distance of six or seven miles from it, I once conceived must have belonged to a Kangaroo-rat, until Mr. Gould informed me that it is

* Mr. Hull's elaboration of the probable limits of the Carboniferous deposits in England, and of the distribution of the sandstones, clays, and limestones of that formation, is published, with a map, in the 'Journal of the Geological Society,' No. 70, May 1862.